



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,452	06/12/2001	Dimitrios Papadimitriou	50001.2059	3538

27045 7590 07/19/2006

ERICSSON INC.
6300 LEGACY DRIVE
M/S EVR C11
PLANO, TX 75024

EXAMINER

PEACHES, RANDY

ART UNIT	PAPER NUMBER
----------	--------------

2617

DATE MAILED: 07/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/879,452

Applicant(s)

PAPADIMITRIOU ET AL.

Examiner

Randy Peaches

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-12 is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. ***Claims 1-3 and 5-6*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Onoe et al (U.S. Patent Number 5,361,396) in view of Ernam et al (U.S. Patent Number 6,148,201) in further view of Boudreau et al. (5,396,681).

Regarding ***claim 1***, Onoe et al discloses a mobile communication network, which reads on claimed "wireless network", providing global paging of mobile stations (115) service by the network comprising:

- a plurality of mobile control centers (101), which reads on claimed "pool of mobile switching centers", for servicing mobile stations (115) within a specified service area of said mobile communication system. See FIGURE 2, columns 4 and 6 lines 11-18 lines 45-47 respectfully; and
- a Home Memory Station (HMS, 102) or Home Location Register (HLR, 102), which reads on claimed "radio configuration database", defining a plurality of groups (A_i, B_j), which reads on claimed "global paging areas", within said specified service area, the said groups having a hierarchical structure and

adjustable to include additional location areas ($A_{1,2,3}$ $B_{1,2,3}$ $C_{1,2,3}$) (see column 2 and 3 lines 3-46 lines 17-34, and FIGURE 2 respectfully;

- a plurality of location areas ($A_{1,2,3}$ $B_{1,2,3}$ $C_{1,2,3}$), each of which having a plurality of radio zones with a specific base station. See column 3 lines 30-34;

However, Onoe et al. fails to clearly detail the occurrence of Base Station Controllers communicating with a said pool of MSC.

Ernam et al. teaches in FIGURE 1 wherein a hierarchical structure of MSC's, BSC's and BS's are arranged, in that, the said MSC is able to communicate with a pool of said BSC's via a mediator (DS). According to the Applicant's claim language, it is not disclosed where a mediator is used or not used in the scheme of communicating with other BSC/RNC's. Therefore, the Examiner maintains that Ernam et al. reads on the claimed invention.

Therefore, at the time of the invention it would have been obvious to a person of ordinary skilled in the art to modify the teachings Onoe et al (U.S. Patent Number 5,361,396) to include Ernam et al (U.S. Patent Number 6,148,201) in order to provide a hierarchical communication structure wherein the said pool of MSC's are able to communicate with the said BSC's via a said mediator (DS).

However, the combination of Onoe et al. and Ernam et al. fails to clearly teach of allowing the global paging area to be dynamically changed by maintaining a history of the movements of the said mobile station and adjusting the associated location area accordingly and the global paging area.

Boudreau et al. defines a method by which the paging of a said mobile terminal is efficiently optimized by maintaining last location area where the said mobile station registered. With this information paging request are sent to a group of location areas, service areas, which reads on claimed "global paging," where the said terminal would be likely found, which reads on claimed "global paging area to be dynamically changed by maintaining a history of the movements of the said mobile station and adjusting the associated location area accordingly and the global paging area," , see column 10 lines 1-13. Further it should be noted that the statistical information gathered by the system relating to the actual location area of the said mobile terminal, forma a basis grouping the location area into paging areas.

Therefore, at the time of the invention it would have been obvious to a person of ordinary skilled in the art to modify the combined teachings Onoe et al and Ernam et al to further include Boudreau et al. in order to provide a system capable of adjusting the said location area of a mobile terminal for the purpose of optimizing the likelihood of locating the said terminal without flooding the system.

Regarding **claim 2**, as the above combination of Onoe et al, Ernam et al and Boudreau et al. are made, the combination according to **claim 1**, Onoe et al discloses defining a plurality of global paging areas further comprises a means for geographically grouping the cell in each said service area. See FIGURE 1.

Regarding **claim 3**, as the above combination of Onoe et al, Ernam et al and Boudreau et al. are made, the combination according to **claim 1**, Onoe et al discloses a means for

paging a said MS that is registered in a cell with the network. See Onoe et al. column 6 lines 25-40 and column 5 lines 30-43.

Regarding **claim 5**, as the above combination of Onoe et al, Ernam et al and Boudreau et al. are made, the combination according to **claim 1**,

- Onoe et al discloses as said mobile communication network wherein said HMS (102) includes a first field for storing the zone's location code, as represented in FIGURE 5 and taught in column 4 lines 11-30, which reads on claimed "cell identity of cells" within said specified service area.
- Onoe et al discloses as said mobile communication network wherein said HMS (102) includes a second field for storing the said location registration area (A_{1-3} , B_{1-3} , C_{1-3}) or group within said specified service area. See FIGURE 5 column 4 lines 11-30.
- Onoe et al teaches of a fourth field containing the paging zones, which reads on claimed "global paging area."

However, Onoe et al. fails to disclose wherein the network routing circuitry which stores the location/identity of the said BSC currently serving a mobile unit.

Ernam et al discloses in column 1, 4, and 9 lines 54-56 lines 32-37 lines 20-27 respectively, of a base station controller (BSC 110, 112, 114) being included in the network routing circuitry which stores the location/identity of the said BSC currently serving a mobile unit.

Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the teachings Onoe et al, and Boudreau et al. to include Ernam et al in order to provide a hierarchical communication structure wherein the said pool of MSC's are able to communicate with the said BSC's via a said mediator (DS) to page a respected MS in the MS's present location.

Regarding **claim 6**, as the above combination of Onoe et al (U.S. Patent Number 5,361,396), Ernam et al (U.S. Patent Number 6,148,201) and Boudreau et al. are made, the combination according to **claim 5**, Onoe et al. teaches wherein any said Mobile Control Center (101) in said plurality, which reads on claimed "pool", is capable of paging a mobile station within said specified service area by accessing a said HMS (102) and determining the zone's location code, which reads on claimed "cell identity", location registration area, and said BSC identity of a mobile station roaming within said specified service area. See Onoe et al column 6 lines 18-47.

Allowable Subject Matter

2. **Claim 4** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding **claim 4**, the claimed language overcomes the prior art based on the "three step" paging scheme prior to paging the entire service area. The prior art teaches of a "one to two step process" prior paging the entire area.

Claims 7 - 12 are allowed.

Regarding **claims 7 - 12**, the claimed language overcomes the prior art based on the premise of the dynamic adjusting of the paging areas numerous times prior to paging the entire paging area, as specifically set forth in **claim 7**.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randy Peaches whose telephone number is (571) 272-7914. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph H. Feild can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Randy Peaches
July 7, 2006



CHARLES APPIAH
PRIMARY EXAMINER